AlQalam
Alq J Med App Sci
https://journal.utripoli.edu.ly/index.php/Alqalam/indexeISSN 2707-7179

Case report

Cushing Syndrome from Functioning Adrenal Adenoma in A Nigerian Woman: A Case Report

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ARTICLE INFO

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Received: *23-03-2024*
Accepted: *27-05-2024*
Published: *14-06-2024*

Keywords. *Cushing Syndrome, Adrenal Adenoma, Nigerian, Hypercortisolism.*

ABSTRACT

Cushing syndrome is a clinical condition characterized by elevated body cortisol level with its attendant clinical features. It's relatively rare. We report this clinical condition due to its rarity and our objective was to illustrate the clinical features, diagnosis and the its successful management. A 23-year-old Nigerian woman was seen at the surgical outpatient department of federal medical centre Dutse, Jigawa State following a referral from the general outpatient department of the same institution with 2 years history of amenorrhea, excessive weight gain and hirsutism. The clinical examination was remarkable for raised blood pressure and Cushingoid appearance. Besides, biochemical and radiological evaluation were suggestive of right adrenal hypercortisolism. She had open right adrenalectomy and was discharged satisfactorily symptoms free with clinical follow that has been uneventful. We have reported our experience on the successful management of a rare case of Cushing syndrome secondary to adrenal adenoma

Cite this article. *Rasheed M, Idowu N, Ado Ya'u N, Isma'il S, Adekunle A, Abib A, et al. Cushing Syndrome from Functioning Adrenal Adenoma in A Nigerian Woman: A Case Report. Alq J Med App Sci. 2024;7(2):417-420.* https://doi.org/10.54361/ajmas.2472030

INTRODUCTION

Cushing syndrome is a clinical condition that is characterized by elevated body cortisol with its attendant clinical features. It is otherwise referred to as hypercortisolism. The epidemiology of hypercortisolism is largely unknown [1]. It is however has been reported in both gender as well as in children, adolescents and adults. Hypercortisolism may result from an endogenous secretion of excess cortisol or as a result of exogenous administration. The exogenous type is seen more commonly. Endogenous hypercortisolism may be as a result of pituitary disorder (Cushing's diseases) or adrenal tumour which can be adrenal hyperplasia, adrenal adenoma or carcinoma. In addition, patient with Cushing

syndrome often present with excessive weight gain, hirsutism, sexual dysfunction, amenorrhea, truncal obesity and moon like facie among others. They may also develop complications such as hypertension, renal insufficiency and diabetes mellitus [2]. The diagnosis of Cushing syndrome is made following biochemical and radiological evidence of hypoadrenalism. The primary treatment for Cushing syndrome is surgical removal of the adrenal tumor [3]. Medical therapy, radiotherapy and in some cases bilateral adrenalectomy may be considered as second line approaches if there is a failure of suppression of the elevated cortisol following primary treatment [4]. Adrenal adenoma as a cause of hypercortisolism is seen less. This formed the basis of this case report and our objective was to highlight the clinical features, diagnosis and successful management of this rare clinical entity.

Case presentation

A 23-year-old Nigerian woman was seen at the surgical outpatient department of federal medical centre, Dutse, Jigawa following a referral from the general outpatient department with 2 years history of amenorrhea, excessive weight gain and hirsutism. Cushingoid features and elevated blood pressure were noticed on examination. Basal cortisol level was markedly raised (235)5-23picogram/ml). Low dose dexamethasone suppression test and evening serum cortisol level were suggestive of hypercortisolism (963.2 nmol/L [138-635nmol/L). Adrenocorticotropic hormone, prolactin, estradiol, luteinizing and follicular stimulating hormone were not remarkable.

The fasting blood sugar, electrolytes urea and creatinine and complete blood count were essentially normal. Abdominopeivic computed tomographic scan showed oval, heterogeneous right suprarenal mass as shown (Figure 1). This radiological feature was suggestive of adrenal adenoma rule out carcinoma. The cranial and chest computed tomography scan were normal. Subsequently, patient had open right adrenalectomy. The intra-operative finding as well as histopathological micrograph as shown in figure 2. She was discharged after the operation with satisfactory clinical condition and clinic follow up was uneventful as all her presenting complaints have resolved. Post-operative biochemical evaluation was normal.

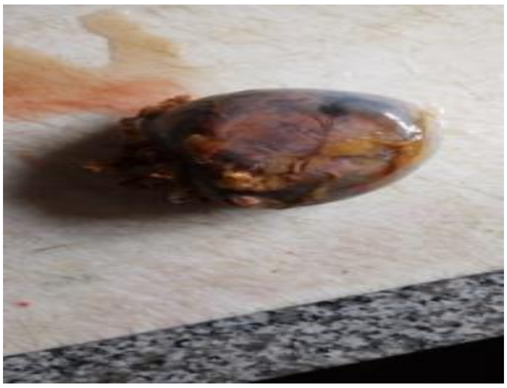


Figure 1. Histopathological micrographs of round to oblong, soft to firm, greyish yellow mass measuring 7.2x 5.9x4. 8cm. Cut sections reveals grey yellow and soft to firm.

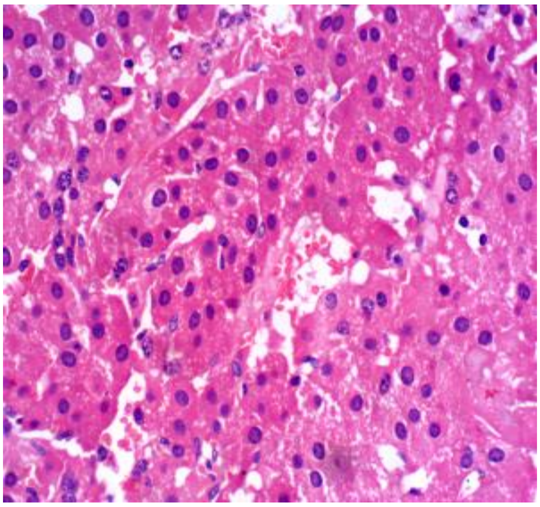


Figure 2. Histologic sections show fairly monomorphic round to oval epithelial cell

DISCUSSION

Adrenal adenoma is a rare cause of relatively rare hypercortisolism which had been scarcely reported in the medical literature [5]. This is the first case of hypercortisolism in our environment. In this case, we have illustrated the clinical features, diagnosis and successful surgical management. Although the epidemiology of Cushing syndrome is largely unknown. This may be linked to its rarity; however, some researchers have reported that it's commonly seen between the age of 20 and 50 years [5]. This index case was not an exception as the age of the patient fell within the common age of occurrence. This clinical disorder was seen more in female on a ratio of 3:1(female -male) [6]. Notably, this perhaps statistically explained our observation concerning the gender of this case.

The clinical features that are seen in patients with Cushing syndrome depends on the extent and degree of tissues exposure to excess cortisol. Some may be less symptomatic while others may have symptoms with complications. We noted that our patient had elevated blood pressure coupled with the usual Cushingoid features. This index case report was in concordant with other similar case series [7]. Similarly, other complications that have been associated with Cushing syndrome are osteoporosis, pathological fracture and renal failure among others [8]. These were not seen in our patient.

The diagnosis of Cushing syndrome as a cause of hypercortisolism is quite challenging [9]. This may not be unconnected with the myriad of causes of hypercortisolism. The diagnosis is generally made following either or more of 24hours urinary cortisol level, low dose dexamethasone suppression test, evening cortisol level, salivary cortisol level, adrenocorticotropic -dexamethasone suppression test and in some cases inferior petrosal sinus assay [10]. This biochemical evaluation is complemented by radiological investigation. This is to know the direct source of the excess cortisol secretion. Urinary cortisol level, evening cortisol and dexamethasone suppression test were done in this case to establish hypercortisolism and the diagnosis of Cushing syndrome was suspected following the detection of suprarenal mass on abdominopelvic computed tomography scan, normal cranial and chest computed tomographic scan. A clinical entity that was ruled out was adrenal carcinoma with histopathological features that were in keeping with adrenal adenoma. In view histopathological sections, there are no significant pleomorphism with increased nuclear cytoplasmic ratio, necrosis and brisk mitotic activity were not identified. This case report also rules out pseudo-Cushing syndrome which causes un sustained excess level of cortisol. This may be as results of diabetes mellitus, major depression and psychological stress among others [11].

The primary treatment for Cushing syndrome secondary to adrenal adenoma is surgical removal of the mass. This necessitate our choice of open adrenalectomy that has been reported as secondary line of treatment after medical therapy, radiotherapy and bilateral adrenalectomy if there is a failure of response following primary treatment. This was not necessary in our patient because of the presence of adequate and satisfactory response. The patient was offered open surgery due to lack of facility for laparoscopy surgery.

CONCLUSION

We have reported our experience on the successful management of a rare case of Cushing syndrome secondary to adrenal adenoma. Open adrenalectomy for a case of active adrenal adenoma may be effective as a primary therapy for Cushing syndrome.

Conflicts of Interest. No conflict of interest

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متلازمة كوشينغ من ورم الغدة الكظرية الوظيفي لدى امرأة نيجيرية: تقرير حالة

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المستخلص

متلازمة كوشينغ هي حالة سريرية تتميز بارتفاع مستوى الكورتيزول في الجسم مع المظاهر السريرية المصاحبة له. إنه نادر نسبيًا. لقد قمنا بالإبلاغ عن هذه الحالة السريرية بسبب ندرتها وكان هدفنا هو توضيح المظاهر السريرية والتشخيص والإدارة الناجحة لها. تمت رؤية امرأة نيجيرية تبلغ من العمر 23 عامًا في قسم العيادات الخارجية الجراحية بالمركز الطبي الفيدرالي دوتسي بولاية جيغاوا بعد إحالة من قسم العيادات الخارجية العام بنفس المؤسسة ولديها تاريخ من انقطاع الطمث وزيادة الوزن المفرط والشعرانية لمدة عامين. كان الفحص السريري ملحوظًا بالنسبة لارتفاع ضغط الدم والمظهر الكوشينويدي. الى جانب ذلك، كان التقييم البيوكيميائي والإشعاعي يوحي بفرط كورتيزول الغدة الكظرية اليمنى. لقد خضعت لعملية استئصال الكظر اليمنى المفتوحة وخرجت من المستشفى بشكل مرضٍ وخالية من الأعراض مع متابعة سريرية كانت هادئة. لقد أبلغنا عن تجربتنا في الإدارة الناجحة لحالة نادرة من متلازمة كوشينغ الثانوية للورم الغدي الكظري.

الكلمات الدالة. متلازمة كوشينغ، ورم الغدة الكظرية، النيجيري، فرط الكورتيزول.